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Response to Office Action dated September 3, 2004
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Art Unit: 2823
Examiner: Dang, Trung Q
Docket No.: SC12746TP

REMARKS

Claims 1-21 were pending and examined. The Examiner objected to claims 5-9, 14-16, and 18. The Examiner rejected claims 1-4, 10-13, 17, and 20 under 35 USC § 102(b) as being anticipated by Hu *et al.* (U.S. Patent No. 6,413,802), hereinafter "Hu". The Examiner rejected claim 19 under 35 USC § 112 as being indefinite. The Examiner indicates claims 5-9, 14-16, and 18 as reciting allowable subject matter. The Examiner allowed claim 21. In this response, Applicant has amended claims 1, 5, 7, 10, 12-14, and 18-20 and canceled claims 11 and 17. Claims 1-10, 12-16, and 18-21 remain pending.

Claim rejections under 35 USC § 102(b)

The Examiner rejected claims 1-4, 10-13, 17, and 20 under 35 USC § 102(b) as being anticipated by Hu.

In response to the rejection of independent claim 1, Applicant has amended claim 1 to recite that the gate electrode includes a first material underlying a second material where a width of the first material is less than a width of the second material. Because support for this amendment is found in the specification as filed (see, e.g., FIG. 6 and the accompanying text at Page 5, line 23 through Page 6, line 8), the amendment introduces no new matter.

Claim 1 as amended recites the formation of a gate electrode in which the width of the first material is less than the width of the overlying second material. Applicant submits that claim 1 as amended incorporates the limitations of claim 5 determined by the Examiner to render claim 5 allowable. The Examiner found claim 5 to be allowable over the prior art because the claim 5 recited a process that produced a gate electrode in which the width of the first gate electrode material was less than the width of the overlying capping layer. Because Applicant has incorporated the substance of this limitation into amended claim 1, Applicant believes that claim 1 as amended is allowable over the prior art. Accordingly, Applicant would respectfully request the Examiner to reconsider and withdraw the anticipation rejection of claim 1 as amended.

Applicant has amended claim 5 to conform the claim language to the claim language of amended claim 1. This amendment is not made for any reason related to the

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patentability of the claimed subject matter. Applicant submits that claim 5 as amended is allowable at least to the same extent that originally submitted claim 5 was allowable.

Applicant has amended claim 7 to correct matters of form. This amendment is not made for any reason related to the patentability of the claimed subject matter.

In addition, Applicant has rewritten dependent claim 10 in independent form incorporating the limitations of claim 1 as originally submitted. Applicant would respectfully submit that claim 10 as amended is not anticipated by Hu. Claim 10 as amended recites a fin formation sequence including etching the exposed portions of the capping dielectric and the underlying silicon, wherein the etching undercuts the silicon relative to the capping dielectric wherein the silicon fin is thinner than the capping dielectric. Support for this claim language is found in the specification in the paragraph beginning on page 8, line 7.

The Examiner rejected claim 10 as originally submitted because Hu describes performing a sacrificial oxidation on the surface of a fin. Hu describes that the sacrificial oxidation somewhat reduces the thickness of the fin, resulting in a thinner fin. Claim 10 as amended recites explicitly that it is the etching of the fin that produces the undercut fin in the claimed process. The fin width reduction taught by Hu results from a thermal oxidation process that consumes portions of the silicon fin by converting the silicon to silicon dioxide. Although Hu discloses a wet etch to remove the sacrificial oxide, this etch does not affect the thickness of the silicon fin. Accordingly, Applicant would respectfully submit that claim 10 as amended recites limitations that are allowable over the cited reference. Therefore, Applicant would respectfully request the Examiner to reconsider and withdraw the anticipation rejection of claim 10 as amended.

In response to the rejection of independent claim 11, Applicant has canceled claim 11 and rewritten claim 14 in independent form incorporating the limitations of claim 11. Consistent with the Examiner's determination the claim 14 as originally submitted recited allowable subject matter, Applicant believes that claim 14 as amended recites allowable matter as well.¹ Applicant

¹ Although originally submitted claim 14 depended on claim 13, which includes a limitation regarding siliciding exposed silicon in the fin, Applicant does not believe the omission of this limitation in claim 14 as amended affects the amended claim's allowability because the silicide process is not germane to the reasons the Examiner found claim 14 to be allowable.

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has also amended claims 12, 13, and 16 to depend on claim 14. Accordingly, Applicant believes that claim 14 as amended and its dependent claims recited allowable subject matter.

With respect to the rejection of independent claim 17, Applicant has canceled claim 17 and amended claim 18 to incorporate the limitations of claim 17. Consistent with the Examiner's determination that claim 18 recites allowable subject matter, Applicant believes that claim 18 as amended is in condition for allowance. Applicant has also amended claims 19 and 20 to depend on claim 18. Accordingly, Applicant believes that amended claim 18 and its dependent claims are in condition for allowance.

Claim rejections under 35 USC § 112

The Examiner correctly rejected claim 19 under 35 USC § 112 as being indefinite for containing antecedent basis problems. Applicant believes that this rejection is obviated by the amendment, referred to above, of claim 19 to depend on claim 18 rather than claim 17. Accordingly, Applicant would respectfully request the Examiner to withdraw the Section 112, second paragraph rejection of claim 19.

CONCLUSION

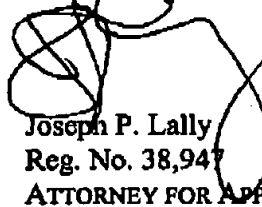
In the present response, Applicant has addressed the objections to the claims, and responded to the Examiner's claim objections, and claim rejections under 35 USC § 102(b), and 35 USC § 112. Accordingly, Applicant believes that this response constitutes a complete response to each of the issues raised in the office action. In light of the amendments made herein and the accompanying remarks, Applicant believes that the pending claims are in condition for allowance. Accordingly, Applicant would request the Examiner to withdraw the rejections, allow the pending claims, and advance the application to issue. If the Examiner has any

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questions, comments, or suggestions, the undersigned attorney would welcome and encourage a telephone conference at 512.428.9872.

Respectfully submitted,



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